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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,860	08/12/2005	Thierry Bernard	930092-2009	4878

7590 08/13/2008  
Ronald R Santucci  
Frommer Lawrence & Haug  
745 Fifth Avenue  
New York, NY 10151

EXAMINER
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LEE, BENJAMIN P

ART UNIT	PAPER NUMBER
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3641

MAIL DATE	DELIVERY MODE
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08/13/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/522,860	<b>Applicant(s)</b> BERNARD, THIERRY	
	<b>Examiner</b> STEWART T. KNOX	<b>Art Unit</b> 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because it appears that the element numbers “5, 6” in figures 2-8 were supposed to read “5a, 6a” as discussed with Ronald Santucci on the phone. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claim 7 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on another multiple dependent claim (claim 4). See MPEP § 608.01(n). Accordingly, the claim 7 not been further treated on the merits.

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***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

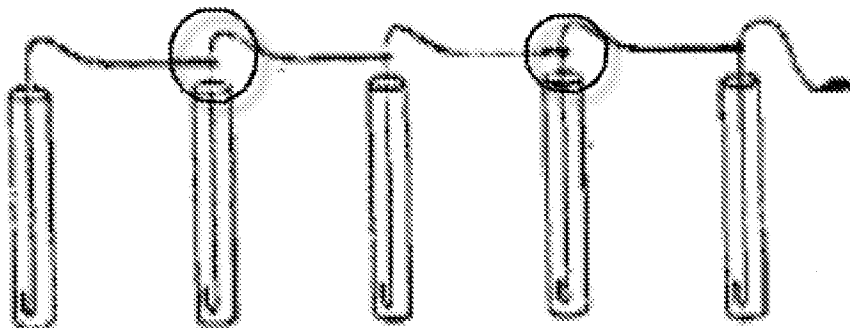
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 3 recites the limitation "the pushing surface" in the last line. There is insufficient antecedent basis for this limitation in the claim, since no pushing surface has been previously positively recited. It will be treated as though it recited "the pushing wall" since it appears to be what was intended to be claimed.

***Claim Rejections - 35 USC § 103***

6. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being obvious over Manual Tecnico and Denasa Detonantes (hereafter "Manual Tecnico") in view of Wilson (4,770,097) and further in view of Holtzapple (3,594,703). Manual Tecnico shows the following arrangement:



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7. The above arrangement comprises a pyrotechnical firing installing for use in a firing program, the firing installation comprising a plurality of detonators (at the bottom), each detonator provided with a cable comprising an end connector (two of them are circled above) at the end of a terminal or end part of the cable, and a surface line to which the cable of each detonator is connected via the end connector, wherein the surface line is at least partially formed by successive sections of the electrical cables of the plurality of detonators, every section comprising the terminal or end part of one of the cables coming from one of the plurality of detonators and the end connector of the cable, thereby to connect the terminal or end part of one cable to the cable of the next detonator to define the origin of the next detonator's terminal or end part anywhere on the electrical cable of the next detonator. Manual Technico does not disclose that this arrangement is used with an electrical cable with electrical connections.

8. Wilson discloses a pyrotechnical firing installation comprising a plurality of detonators (figures) each with an electric cable (figure 3, element 6) comprising at least two connection conductors, and a surface line (figure 3, element 20) to which the cable (6) of each detonator is connected, wherein the surface line is formed by sections (figure 3, including 20, 22, 24) comprising a terminal or end part and an end connector to connect the terminal part of the cable to the cable of the next detonator. In particular, such an arrangement shows that a firing program wherein previous cables coming from detonators are attached to a subsequent detonator may comprise electric cables, such electric cables being suitable for use in situations that, e.g., require more precise timing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the firing program of Manual Technico to use electrical cables and connections as taught by Wilson, since electrical cables are well known in the art of

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detonators to provide different advantages and results over conventional detonator cords and such a modification would bring the advantages of Manual Technico's arrangement to a broader range of detonator types.

9. In regard to claims 2-6 and the electrical cable connector of claim 1, Manual Technico and Wilson as applied above disclose the claimed invention, but do not disclose an end connector as claimed. Holtzapple discloses an end connector for use in a pyrotechnical firing installation, labeled in a diagram on the next page, containing the following elements:

10. a first part solid with the end of an electrical cable which electrical cable comes from a detonator, the first part provided laterally with a connection pin to penetrate, in use, into the inside of an electrical cable coming from another detonator, and on the opposite side to the pins a pushing wall, and

11. a second part comprising a slide and a stop wall, into which the first part is mounted movable in relation to the stop wall which faces the connection pins, the wall and the slide defining a seat suitable for receiving an electrical cable oriented transversely to the electrical cable equipped with the connector.

12. In regard to claim 1, Holtzapple discloses an arrangement wherein at least part of the end connector penetrates into the inside of the cable ensuring electrical connection of the respective connection conductors of the successive sections of the electrical cables in order to connect one cable to the next.

13. In regard to claim 3, Holtzapple discloses that the slide comprises lateral walls, perpendicular to the stop wall, of which at least one of the lateral walls comprises on its outside a

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holding means of the first part provided with a flexible locking tab approximately perpendicular to the pushing surface.

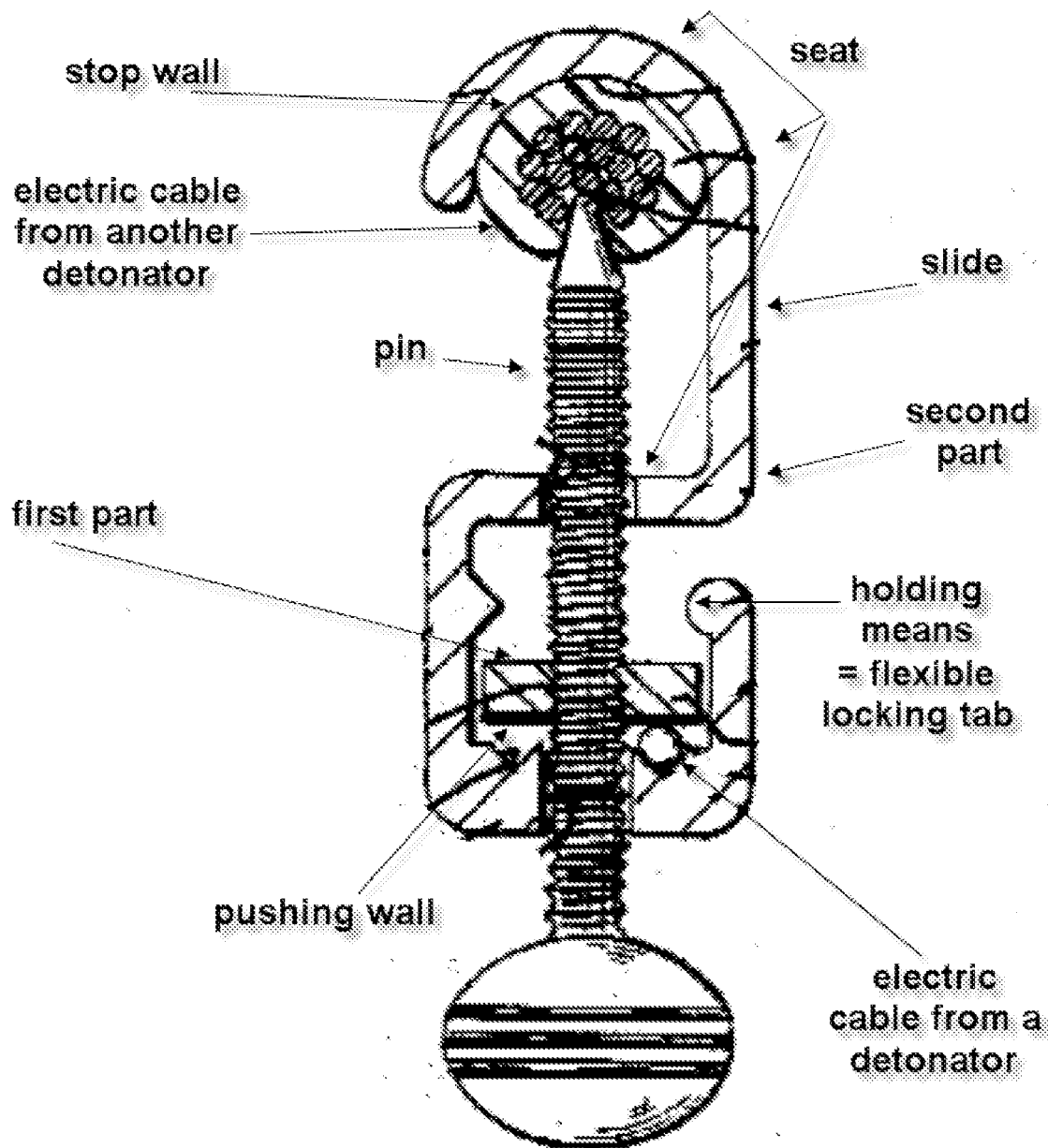
14. In regard to claim 4 over claims 2 or 3, the profile of the section of the electrical cable corresponds with regard to shape to the profile of the seat of the second part of the connector.

15. In regard to claim 5, the arrangement disclosed can be used with a flat cable or cables of different shapes, and the seat has a corresponding flat surface passed through by the connection pins of the first part of the connector.

16. In regard to claim 6, the stop wall may be provided, opposite the slide, with a lateral wedging bead for the electrical cable received in the seat (figures 6 and 8, element 128).

17. The combination described above discloses the claimed invention except for more than one connection pin. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide more than one connection pin, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

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### *Response to Arguments*

18. Prosecution in this case has been re-opened after receipt of the pre-brief conference request in view of the lack of teaching on Manual Technico alone for specific electrical elements

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in the independent claim 1. The remaining rejection has remained unchanged, and since this change of rejection is made in response to the amendment of electrical elements into the independent claim, this action will also be made final to replace the final rejection of October 1<sup>st</sup>, 2007.

19. First, applicant argues in the arguments attached to the Pre-Brief Conference request of April 1st, 2008, that the prior art does not disclose a firing program. Respectfully, it is believed that the term "firing program" is a term sufficiently broad enough to include the art cited and discussed above. Further, the system clearly includes more than one connection conductor (the section where each previous cord connects to the next).

20. Second, applicant argues that Manual Technico is not an electric system and, by implication, that it would not be obvious to make it electrical. In response, the rejection has been amended as presented above.

21. Third, applicant argues that Manual Technico does not provide control of detonator ignition in relation to the general firing signal as is required for a firing program. In response, it is noted that varying the length of the cables or the type of cables used provides control, as does the mere act of deciding when or if to ignite the detonators. Such an arrangement comprises a firing program.

22. Fourth, applicant argues that the connector of Holtzapple is not "solid" with the electrical connector. As has been previously discussed, the term "solid" is sufficiently vague enough to include several interpretations, one of which is the arrangement of Holtzapple where the two are in contact with one another. Applicant further argues that "the first part of Holtzapple is not solid with the electric cable from a detonator until the electric cable from another detonator is

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introduced." (page 4) Thus it appears that Applicant has admitted that there exists a point where the two exist in a solid relationship – that there exists a time when they are not in that relationship is irrelevant, since the claim relates to an arrangement of an apparatus and not a method with defined steps. Applicant argues that in order to introduce a second cable, the screw (pin) must be loosened, resulting in the first electric cable no longer being solid with the connector. However, once the system is re-connected, the solid relationship will be restored.

23. Finally, applicant argues that the two cables are not oriented transversely to one another. However, the cables may be oriented in any way the user chooses outside of the arrangement: either of the cables as shown above could veer off to the side (and thus be transverse) once they leave the arrangement of Holtzapple. Nothing in the claim requires that they maintain a specific orientation only in the connector, and further, the orientation of the cables amounts to a mere design choice in the placement of elements and would be obvious to one of ordinary skill in the art to modify.

### ***Conclusion***

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stewart T. Knox whose telephone number is (571) 272-8235. The examiner can normally be reached on Monday through Thursday, 8:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on (571) 272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stewart Knox/

/Troy Chambers/

Primary Examiner, Art Unit 3641